

Young Woman With Chronic Conversion Disorder With Dramatic Improvement in Upper Motor Neuron Type Syndromes Through the Use of Electromyography (EMG) Triggered Biofeedback

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ABSTRACT

Patient: 31 year old woman chronic flexion contracture of hand, prior history seizure disorder, chronic conversion disorder.

Program Description: Patient presented initially to neurology service with chronic right hand flexion contracture in the context of 3 days of weakness and numbness in lower extremities after exertion. MRI/MRA Brain, Head CT, CT of entire spine were all unrevealing. Patient was transferred to the rehabilitation unit 8 days after initial admission. On rehabilitation admission patient exam was noted to have right hand markedly flexed with pain to passive ranging out of extreme flexion, chronic in nature. Patient initially had her hand ranged in the context of traditional therapy with limited success; however with use of EMG biofeedback patient was able to move all five metacarpophalangeal joints on rehabilitation day 4, patient remarking that she was right handed again. Her pain level also dramatically decreased. Her overall functional status improved markedly by discharge and though she remained with decreased active range-of-motion in her right hand, it did not detract from her overall functional status.

Setting: Rehabilitation Unit, University Hospital

Results: A search of the literature revealed that traditional therapy for recalcitrant conversion disorder had met with limited success calling for a more sophisticated approach. A series of case reports described by Fishbain et al described EMG biofeedback training as being helpful for various paralyses, apparently mostly of a flaccid type. Over several days, this patient's severe hand contracture and upper motor neuron type symptoms secondary to psychogenic causes improved with the use of EMG biofeedback with more success than traditional therapy.

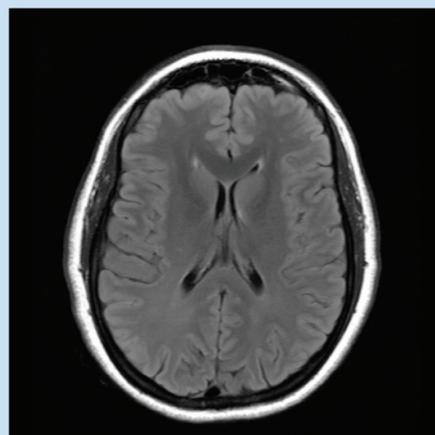
Conclusions: Chronic conversion disorder is difficult to treat using traditional therapy. Previously described for more flaccid type dysfunction as a therapeutic modality – in this case, upper motor neuron like pathology was treated with success using EMG biofeedback.

BACKGROUND

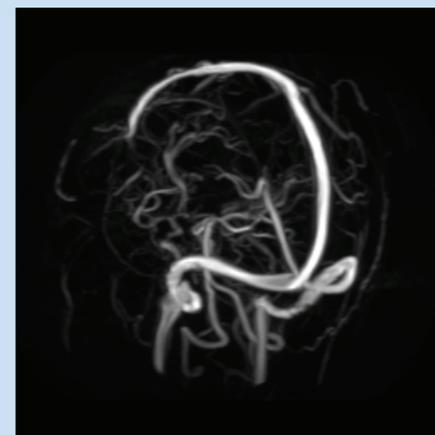
Acute conversion disorder is frequently amenable to treatment and in its natural historical course tends to revert towards the normalization of function. Chronic conversion disorder is difficult to treat with conventional rehabilitation therapies, and usually requires an intense behavioral approach as noted by Teasell, et al. EMG-biofeedback is traditionally used for stroke rehabilitation, with great success.

This particular case is noteworthy because it utilized the EMG triggered biofeedback in the treatment of a patient presenting with conversion disorder presenting with chronic upper neuron-like physical findings. In an article by Fishbain, et al in 1986, EMG Triggered Biofeedback was utilized for the treatment of chronic flaccid type paralysis with significant improvement. The previous cases described have been of lower extremity paralysis; this case introduces an upper extremity example.

PATIENT IMAGING



Patient Normal MRI Brain



Patient Normal MR Brain Vessels Image

EMG TRIGGERED BIOFEEDBACK

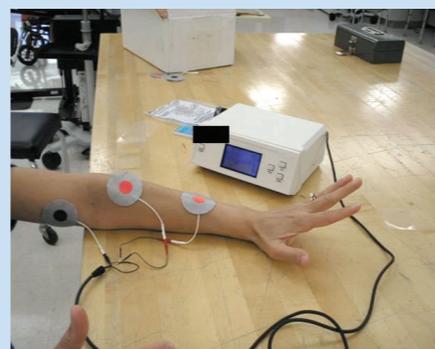


Photo Credits: Magee Rehabilitation, Stroke Rehabilitation Unit

EMG Triggered Biofeedback is used traditionally in stroke rehabilitation and works by sensing residual motor impulses, subsequently providing feedback with either a signal or by producing a muscle contraction as a "reward" for an attempted movement.

TREATMENT/RESULTS

In Ms. P's case, the multi-disciplinary team including physical and occupation therapy attempted to use ranging, progressive towel roll stretching in an attempt to help reduce the contracture of the right hand, as if it had been produced by an organic cause. The patient was also trialed off of tizanidine, which caused her pain to worsen dramatically, so the medication was restarted. Initially, she did not use the right hand functionally.

After her EMG biofeedback trial on rehabilitation day four she was able to move all 5 MP joints of her right hand and then began to use her right upper extremity for wheelchair propulsion. Her right hand flexion contracture was significantly better. Patient remarked she was "right handed again." Her pain improved significantly. Ms. P was subsequently discharged on rehabilitation day 5 at modified independent level.

CONCLUSIONS

The success in the use of EMG triggered biofeedback in this instance of chronic conversion disorder suggests that it is a technique that could be employed in similar cases of chronic conversion disorder that are recalcitrant to treatment with more traditional techniques.

EMG biofeedback is an empowering technique as it validates the patient's disorder and allows them to express motor function through its use.

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